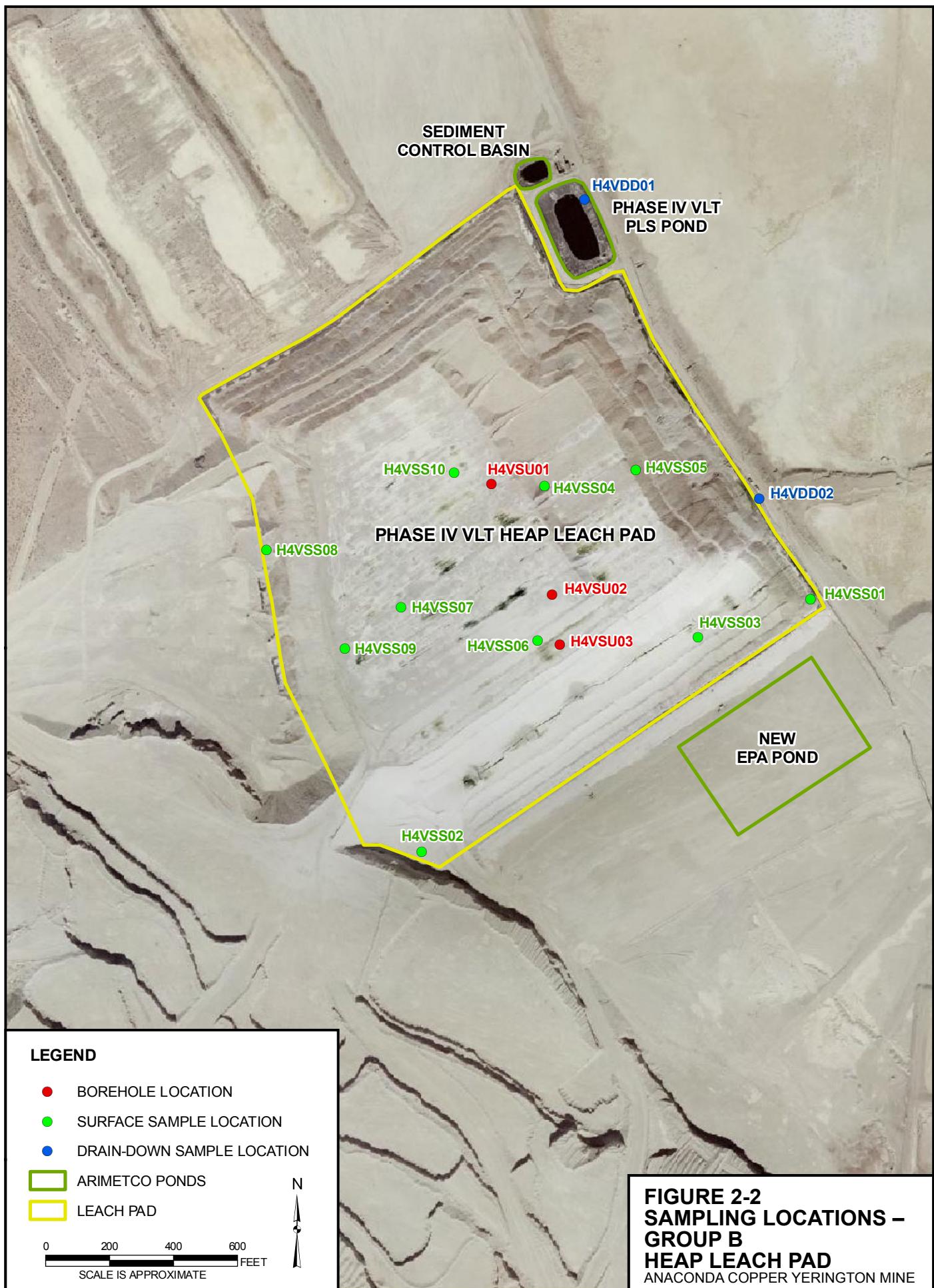


Appendix A-3
Arimetco HLPs





APPENDIX D

DRAFT

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

Parameter:		Acid Generation Potential (calc on Sulfur total)	Acid Neutralization Potential (calc)	Acid-Base Potential (calc on Sulfur total)	Net Acid Generation Procedure	Neutralization Potential as CaCO3	Sulfur Organic Residual	Sulfur Pyritic Sulfide	Sulfur Sulfate	Sulfur Total	Total Sulfur minus Sulfate	
Units:		t CaCO3/Kt	t CaCO3/Kt	t CaCO3/Kt	Kg H2SO4/t	%	%	%	%	%	%	
Location	Sample Date	Depth ¹	Analytical Results									
PHASE I/II HEAP LEACH PAD: Soil Boring Composite												
H12SU01	10/11/2007	0-50	12	0	-12	---	0.1 U	0.02	0.01	0.36	0.39	0.03
H12SU01	10/11/2007	50-77	19	0	-19	---	0.1 U	0.04	0.01	0.57	0.62	0.05
H12SU02	10/10/2007	0-50	16	0	-16	---	0.1 U	0.02	0.01 U	0.49	0.5	0.01
H12SU02	10/10/2007	50-77	16	4	-12	---	0.4	0.02	0.01	0.48	0.51	0.03
PHASE III 4X HEAP LEACH PAD: Soil Boring Composite												
H3XSU01	10/16/2007	0-50	19	7	-12	---	0.7	0.03	0.01	0.57	0.61	0.04
H3XSU01	10/16/2007	50-67	24	0	-24	---	0.1 U	0.02	0.01 U	0.74	0.76	0.02
H3XSU02	10/17/2007	50-67	18	12	-6	---	1.2	0.03	0.01 U	0.53	0.56	0.03
H3XSU03	10/17/2007	0-50	19	6	-13	---	0.6	0.01 U	0.01	0.6	0.61	0.01
PHASE III SOUTH HEAP LEACH PAD: Soil Boring Composite												
H3SSU01	9/25/2007	0-50	23	0	-23	4	0.1 U	0.02	0.01 U	0.7	0.72	0.02
H3SSU01	9/25/2007	20-97	23	0	-23	5	0.1 U	0.03	0.01	0.69	0.73	0.04
H3SSU02	10/7/2007	100-112	23	0	-23	---	0.1 U	0.02	0.01	0.72	0.75	0.03
H3SSU02	10/7/2007	50-100	21	0	-21	---	0.1 U	0.02	0.01 U	0.64	0.66	0.02
H3SSU03	10/6/2007	0-50	28	0	-28	---	0.1 U	0.04	0.01	0.84	0.89	0.05
H3SSU03	10/6/2007	100-117	20	0	-20	---	0.1 U	0.05	0.02	0.56	0.63	0.07
H3SSU04	9/26/2007	100-116.5	22	0	-22	5	0.1 U	0.05	0.01	0.63	0.69	0.06
H3SSU04	9/26/2007	50-100	18	0	-18	5	0.1 U	0.05	0.01 U	0.53	0.58	0.05
PHASE IV SLOT HEAP LEACH PAD: Soil Boring Composite												
H4SSU01	10/8/2007	0-50	23	0	-23	---	0.1 U	0.01	0.01	0.72	0.74	0.02
H4SSU01	10/8/2007	50-97	37	3	-34	---	0.3	0.01	0.01	1.17	1.19	0.02
H4SSU03	10/9/2007	50-77	20	0	-20	---	0.1 U	0.02	0.01 U	0.63	0.65	0.02
PHASE IV VLT HEAP LEACH PAD: Soil Boring Composite												
H4VSL01	9/27/2007	0-50	23	0	-23	6	0.1 U	0.03	0.01	0.71	0.75	0.04
H4VSL01	9/27/2007	50-107	33	0	-33	4	0.1 U	0.03	0.01 U	1.02	1.05	0.03
H4VSL02	10/2/2007	0-50	18	3	-15	---	0.3	0.03	0.01	0.55	0.59	0.04
H4VSL02	10/5/2007	50-107	27	26	-1	---	2.6	0.01	0.01	0.85	0.87	0.02
H4VSL03	10/6/2007	0-50	24	3	-21	---	0.3	0.05	0.02	0.7	0.77	0.07
H4VSL03	10/6/2007	50-87	25	17	-8	---	1.7	0.01 U	0.02	0.78	0.8	0.02

Notes:

¹ - depth in feet below ground surface

t CaCO3/Kt - Calcium carbonate / kilogram / ton

% - percent

U - Not detected at reporting limit

calc - calculation

APPENDIX D

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

DRAFT

Parameter:	pH	Alkalinity, Bicarbonate (as CACO3)	Alkalinity, Carbonate (as CACO3)	Alkalinity, Hydroxide (as CACO3)	Alkalinity, Total (as CACO3)	Chloride	Moisture	Nitrogen, Kjeldahl Total	Phosphorus, Total (as P)	Sodium Absorption Ratio	Total Nitrogen	Total Oxidizable Nitrogen	Boron	Calcium	Magnesium	Potassium	Sodium	TPH, as diesel	
	pH units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	%	mg/Kg	mg/Kg	NA	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
Location	Sample Date	Analytical Results																	
PHASE I/II HEAP LEACH PAD: Soil Boring Composite																			
H12SU01	10/11/2007	---	---	---	---	---	---	---	---	---	---	---	200,000	--	--	--	--	--	
H12SU01 (FD)	10/11/2007	---	---	---	---	---	---	---	---	---	---	---	16,000	--	--	--	--	--	
H12SU02	10/11/2007	---	---	---	---	---	---	---	---	---	---	---	--	--	--	--	--	100	
H12SU02 (FD)	10/10/2007	---	---	---	---	---	---	---	---	---	---	---	--	--	--	--	--	---	
PHASE I/II HEAP LEACH PAD: Surface Discrete																			
H12SS01	10/23/2007	3.58	0.88 U	0.88 U	0.88 U	0.88 U	43	3.6	250	849	0.041	250	3.6	18.2	3,460	5,630	592	173	---
H12SS01 (FD)	10/23/2007	3.64	0.88 U	0.88 U	0.88 U	0.88 U	38 J	3.7	180	730	0.046	180	2.3	18	3,970	5,500	648	202	---
H12SS02	10/23/2007	3.46	0.89 U	0.89 U	0.89 U	0.89 U	57	4.9	92	529	0.075	94	1.9	15.5	5,850	6,310	457	348	10 U
H12SS02 (FD)	10/23/2007	3.84	0.89 U	0.89 U	0.89 U	0.89 U	80 J	4.3	220	534	0.083	220	1.6	15.9	5,870	6,200	517	387	---
H12SS03	10/23/2007	3.41	0.88 U	0.88 U	0.88 U	0.88 U	13 J	2.9	110	519	0.032	110	0.74 J	10.1	8,920	4,400	908	146	---
H12SS03 (FD)	10/23/2007	3.8	0.87 U	0.87 U	0.87 U	0.87 U	13 J	2.4	110	300	0.021	110	0.66 U	8.8	7,270	4,080	543	93.1 J	---
PHASE III 4X HEAP LEACH PAD: Soil Boring Composite																			
H3XSU01	10/16/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
H3XSU02	10/17/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
H3XSU02 (FD)	10/17/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
H3XSU03	10/17/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
PHASE III 4X HEAP LEACH PAD: Surface Discrete																			
H3XSS05	10/25/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	11	
H3XSS06	10/25/2007	3.28	1.1 U	1.1 U	1.1 U	1.1 U	98 J	22.7	390	719	0.11	400	2	26.9	33,500	10,500	2,550	1,030	---
H3XSS06 (FD)	10/25/2007	3.29	1.1 U	1.1 U	1.1 U	1.1 U	98 J	22.6	420	798	0.1	420	2.4	31.3	57,900	11,700	3,050	1,210	---
H3XSS07	10/25/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	32	
H3XSS08	10/25/2007	3.7	0.9 U	0.9 U	0.9 U	0.9 U	15 J	5.2	120	392	0.025	120	0.68 U	12.8	1,590	6,310	1,190	107	---
PHASE III SOUTH HEAP LEACH PAD: Soil Boring Composite																			
H3SSU01	9/25/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9.1	
H3SSU02	10/7/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.4 J	
PHASE III SOUTH HEAP LEACH PAD: Surface Discrete																			
H3SSS02	10/25/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.9 J	
H3SSS04	10/25/2007	3.76	0.85 U	0.85 U	0.85 U	0.85 U	21	2 U	120	409	0.089	130	4.9	10.7	3,800	3,220	1,470	322	---
H3SSS04 (FD)	10/25/2007	3.81	0.85 U	0.85 U	0.85 U	0.85 U	14 J	2 U	1,500	416	0.098	1,400	0.64 U	10.7	4,580	3,240	1,460	373	---
H3SSS05	10/24/2007	3.44	0.92 U	0.92 U	0.92 U	0.92 U	18 J	7.8	250	1,370	0.063	250	0.69 U	23.1	2,110	4,520	1,380	242	---
H3SSS05 (FD)	10/24/2007	3.44	0.92 U	0.92 U	0.92 U	0.92 U	18 J	8.1	81	1,320	0.062	81	0.94 J	20.6	2,130	3,820	1,180	215	---
H3SSS06	10/25/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	15	
PHASE IV SLOT HEAP LEACH PAD: Soil Boring Composite																			
H4SSU01	10/8/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	96	
H4SSU02	10/9/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10 U	
H4SSU03	10/9/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
PHASE IV SLOT HEAP LEACH PAD: Surface Discrete																			
H4SSS01	10/24/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10 U	
H4SSS03	10/23/2007	3.63	0.89 U	0.89 U	0.89 U	0.89 U	17 J	4.9	180	269	0.048	180	0.67 U	9.3	6,470	4,680	508	215	170

APPENDIX D

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

Parameter:	pH	Alkalinity, Bicarbonate (as CACO ₃)	Alkalinity, Carbonate (as CACO ₃)	Alkalinity, Hydroxide (as CACO ₃)	Alkalinity, Total (as CACO ₃)	Chloride	Moisture	Nitrogen, Kjeldahl Total	Phosphorus, Total (as P)	Sodium Absorption Ratio	Total Nitrogen	Total Oxidizable Nitrogen	Boron	Calcium	Magnesium	Potassium	Sodium	TPH, as diesel
	pH units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	%	mg/Kg	mg/Kg	NA	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Location	Sample Date	Analytical Results																
PHASE IV SLOT HEAP LEACH PAD: Surface Discrete																		
H4SSS05	10/23/2007	3.51	0.92 U	0.92 U	0.92 U	0.92 U	19 J	7.5	160	441	0.029	150	0.69 U	8.5	3,760	2,300	480	98.7 J
H4SSS06	10/24/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.7 J
PHASE IV VLT HEAP LEACH PAD: Soil Boring Composite																		
H4VSS01	9/27/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10 U
H4VSS02	10/5/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.8
PHASE IV VLT HEAP LEACH PAD: Surface Discrete																		
H4VSS02	10/26/2007	3.57	0.87 U	0.87 U	0.87 U	0.87 U	34 J	2.8	130	848	0.071	130	0.66 U	13	5,900	7,190	1,600	349
H4VSS04	10/26/2007	3.25	0.95 U	0.95 U	0.95 U	0.95 U	120	10.7	110	900	0.089	120	2.8	18.6	14,200	7,180	3,490	578
H4VSS04 (FD)	10/26/2007	3.26	0.98 U	0.98 U	0.98 U	0.98 U	120	12.9	130	1,260	0.11	130	2.4	25.4	16,000	6,700	4,990	719
H4VSS08	10/26/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10 U
H4VSS09	10/26/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	19
H4VSS10	10/26/2007	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	30
VLT SOIL: Surface Discrete																		
CAPSS01	10/29/2007	5.9	1,200	0.85 U	0.85 U	1,200	37	2 U	120	374	0.05	120	2.8	11	11,000	4,400	1,030	252
CAPSS01 (FD)	10/29/2007	7.89	1,700	0.85 U	0.85 U	1,700	37	2 U	130	559	0.038	130	2	14	13,900	4,860	1,060	207
CAPSS02	10/26/2007	4.04	0.85 U	0.85 U	0.85 U	0.85 U	15 J	2 U	110	430	0.015	110	2.2	26	5,420	5,830	1,420	67.4 J
CAPSS03	10/29/2007	2.7	0.9 U	0.9 U	0.9 U	0.9 U	32 J	5.3	300	305	0.41	300	0.68 U	28.3	2,180	674	1,690	913
CAPSS03 (FD)	10/29/2007	2.66	0.89 U	0.89 U	0.89 U	0.89 U	24	5	270	303	0.27	270	0.67 U	28.3	2,630	1,070	1,590	674

Notes:

1 - depth in feet below ground surface

mg/Kg - milligrams per kilogram

% - percent

J - Estimated result

U - Not detected at reporting limit

P - Phosphorous

PRG - Preliminary Remediation Goal (EPA, 2004)

--- no PRG available

FD1 - Sample was not originally designated as a field duplicate, but laboratory analyzed more analytes than requested on chain of custody

APPENDIX D

DRAFT

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

Parameter:	TPH, as kerosene	TPH, as motor oil	
Industrial PRG:	--	--	
Residential PRG:	--	--	
NV Cleanup Standard	100	100	
Units:	mg/Kg	mg/Kg	
Location	Sample Date	Analytical Results	
PHASE I/II HEAP LEACH PAD: Soil Boring Composite			
H12SU01	10/11/2007	10 U	---
H12SU01 (FD)	10/11/2007	10 U	---
H12SU02	10/11/2007	5 U	---
H12SU02 (FD)	10/10/2007	10 U	40 U
PHASE I/II HEAP LEACH PAD: Surface Discrete			
H12SS01	10/23/2007	---	---
H12SS01 (FD)	10/23/2007	---	---
H12SS02	10/23/2007	10 U	40 U
H12SS02 (FD)	10/23/2007	---	---
H12SS03	10/23/2007	---	---
H12SS03 (FD)	10/23/2007	---	---
PHASE III 4X HEAP LEACH PAD: Soil Boring Composite			
H3XSU01	10/16/2007	10 U	40 U
H3XSU02	10/17/2007	10 U	19 J
H3XSU02 (FD)	10/17/2007	10 U	16 J
H3XSU03	10/17/2007	10 U	17 J
PHASE III 4X HEAP LEACH PAD: Surface Discrete			
H3XSS05	10/25/2007	16 U	14 J
H3XSS06	10/25/2007	---	---
H3XSS06 (FD)	10/25/2007	---	---
H3XSS07	10/25/2007	52 U	29
H3XSS08	10/25/2007	---	---
PHASE III SOUTH HEAP LEACH PAD: Soil Boring Composite			
H3SSU01	9/25/2007	32 U	---
H3SSU02	10/7/2007	10 U	---
PHASE III SOUTH HEAP LEACH PAD: Surface Discrete			
H3SSS02	10/25/2007	5 U	40 U
H3SSS04	10/25/2007	---	---
H3SSS04 (FD)	10/25/2007	---	---
H3SSS05	10/24/2007	---	---
H3SSS05 (FD)	10/24/2007	---	---
H3SSS06	10/25/2007	22 U	25
PHASE IV SLOT HEAP LEACH PAD: Soil Boring Composite			
H4SSU01	10/8/2007	196 U	---
H4SSU02	10/9/2007	10 U	---
H4SSU03	10/9/2007	10 U	13 J
PHASE IV SLOT HEAP LEACH PAD: Surface Discrete			
H4SSS01	10/24/2007	10 U	40 U
H4SSS03	10/23/2007	280 U	85

APPENDIX D

DRAFT

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

Parameter:	TPH, as kerosene	TPH, as motor oil	
Industrial PRG:	--	--	
Residential PRG:	--	--	
NV Cleanup Standard	100	100	
Units:	mg/Kg	mg/Kg	
Location	Sample Date	Analytical Results	
PHASE IV SLOT HEAP LEACH PAD: Surface Discrete			
H4SSS05	10/23/2007	---	---
H4SSS06	10/24/2007	12 U	75
PHASE IV VLT HEAP LEACH PAD: Soil Boring Composite			
H4VSU01	9/27/2007	10 U	---
H4VSU02	10/5/2007	10 U	---
PHASE IV VLT HEAP LEACH PAD: Surface Discrete			
H4VSS02	10/26/2007	---	---
H4VSS04	10/26/2007	---	---
H4VSS04 (FD)	10/26/2007	---	---
H4VSS08	10/26/2007	10 U	13 J
H4VSS09	10/26/2007	32 U	13 J
H4VSS10	10/26/2007	34 U	40 U
VLT SOIL: Surface Discrete			
CAPSS01	10/29/2007	---	---
CAPSS01 (FD)	10/29/2007	---	---
CAPSS02	10/26/2007	---	---
CAPSS03	10/29/2007	---	---
CAPSS03 (FD)	10/29/2007	---	---

Notes:

1 - depth in feet below ground surface

mg/Kg - milligrams per kilogram

% - percent

J - Estimated result

U - Not detected at reporting limit

P - Phosphorous

PRG - Preliminary Remediation Goal (EPA, 2004)

--- no PRG available

FD1 - Sample was not originally designated as a field duplicate, but laboratory analyzed more analytes than requested on chain of custody

APPENDIX D

DRAFT

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

Parameter:		Alpha	Beta	Thorium 227	Thorium 228	Thorium 230	Thorium 232	Uranium 234	Uranium 235	Uranium 238	Yield	
Residential PRG:		--	--	113	24.2	3.49	3.1	4.01	0.205	4.46	--	
Units:		pCi/g ± unc	pCi/g ± unc	pCi/g ± unc	pCi/g ± unc	pCi/g ± unc	pCi/g ± unc	pCi/g ± unc	pCi/g ± unc	pCi/g ± unc	%	
Location	Sample Date	Depth ¹	Analytical Results									
PHASE I/II HEAP LEACH PAD: Soil Boring Composite												
H12SU01	10/11/2007	0-50	23.6 ± 15.5	29 ± 5.87	ND ± 0.0943	1.28 ± 0.247	1.38 ± 0.253	0.884 ± 0.189	0.996 ± 0.221	0.0642 ± 0.0592	0.874 ± 0.204	92.9
H12SU02	10/10/2007	50-77	18 ± 14	28.9 ± 5.8	0.15 ± 0.106	1.54 ± 0.273	1.46 ± 0.256	1.31 ± 0.236	0.849 ± 0.201	0.0816 ± 0.0626	0.727 ± 0.183	93.9
PHASE I/II HEAP LEACH PAD: Surface Discrete												
H12SS01	10/23/2007	0.25-0.75	42.9 ± 19.4	32.1 ± 6.18	---	---	---	---	---	---	---	
H12SS02	10/23/2007	0.25-0.75	33.9 ± 16.9	31 ± 5.89	---	---	---	---	---	---	---	
H12SS03	10/23/2007	0.25-0.75	60 ± 22.2	29.9 ± 5.96	---	---	---	---	---	---	---	
PHASE III 4X HEAP LEACH PAD: Soil Boring Composite												
H3XSU01	10/16/2007	50-67	21.1 ± 15.3	30.8 ± 6.03	0.171 ± 0.125	1.41 ± 0.267	0.986 ± 0.206	1 ± 0.208	1.28 ± 0.256	0.0471 ± 0.047	1.24 ± 0.249	98
H3XSU02	10/16/2007	0-50	32.1 ± 16.8	26.5 ± 5.58	ND ± 0.131	1.22 ± 0.267	1.8 ± 0.331	0.809 ± 0.197	1.68 ± 0.307	0.0623 ± 0.0543	1.21 ± 0.244	85.8
H3XSU03	10/17/2007	50-67	31.1 ± 16.9	26.1 ± 5.43	0.174 ± 0.125	1.9 ± 0.341	3.67 ± 0.546	1.45 ± 0.275	2.5 ± 0.399	0.154 ± 0.0755	2.04 ± 0.34	85.4
PHASE III 4X HEAP LEACH PAD: Surface Discrete												
H3XSS06	10/25/2007	0.25-0.75	73.7 ± 24.5	60 ± 8.69	---	---	---	---	---	---	---	
H3XSS08	10/25/2007	0.25-0.75	35.8 ± 17.5	33.5 ± 6.24	---	---	---	---	---	---	---	
PHASE III SOUTH HEAP LEACH PAD: Soil Boring Composite												
H3SSU01	9/25/2007	20-97	35.4 ± 18	25.7 ± 5.52	0.191 ± 0.145	1.35 ± 0.275	1.57 ± 0.292	1.03 ± 0.221	1.63 ± 0.313	ND ± 0.0531	1.46 ± 0.289	92.4
H3SSU01	10/7/2007	0-50	24.3 ± 15.4	34.2 ± 6.37	ND ± 0.113	1.41 ± 0.271	1.6 ± 0.287	1.04 ± 0.215	1.28 ± 0.262	0.0923 ± 0.0664	1.33 ± 0.27	88.5
H3SSU03	10/6/2007	50-100	34 ± 17	27 ± 5.66	0.136 ± 0.102	1.04 ± 0.216	1.46 ± 0.262	0.858 ± 0.184	1.27 ± 0.242	0.0625 ± 0.0503	1.23 ± 0.235	90.7
H3SSU04	9/26/2007	0-50	26.6 ± 16.1	27.7 ± 5.74	ND ± 0.117	1.24 ± 0.256	1.94 ± 0.335	1.03 ± 0.219	1.5 ± 0.311	0.134 ± 0.0911	1.38 ± 0.294	95.3
PHASE III SOUTH HEAP LEACH PAD: Surface Discrete												
H3SSS04	10/25/2007	0.25-0.75	22.9 ± 15.8	34 ± 6.38	---	---	---	---	---	---	---	
H3SSS05	10/24/2007	0.25-0.75	38.3 ± 17.8	29.5 ± 5.81	---	---	---	---	---	---	---	
PHASE IV SLOT HEAP LEACH PAD: Soil Boring Composite												
H4SSU01	10/8/2007	0-50	33 ± 17.3	30.9 ± 6.06	0.268 ± 0.155	1.68 ± 0.311	3.18 ± 0.483	1.26 ± 0.249	1.81 ± 0.319	0.0876 ± 0.0657	1.68 ± 0.302	97
H4SSU02	10/9/2007	0-50	16.7 ± 14.4	26.5 ± 5.58	0.234 ± 0.144	1.33 ± 0.272	2.68 ± 0.429	0.957 ± 0.211	2 ± 0.351	0.102 ± 0.0683	1.6 ± 0.299	90.4
H4SSU03	10/9/2007	50-77	23.8 ± 15	33.8 ± 6.27	0.354 ± 0.157	1.58 ± 0.283	1.79 ± 0.302	1.4 ± 0.254	1.55 ± 0.274	0.0756 ± 0.0534	1.51 ± 0.269	91.1
H4SSU04	10/9/2007	0-50	19.2 ± 14.3	27.2 ± 5.58	0.162 ± 0.0965	1.72 ± 0.284	1.47 ± 0.25	1.13 ± 0.208	1.37 ± 0.264	ND ± 0.0463	1.32 ± 0.258	93
PHASE IV SLOT HEAP LEACH PAD: Surface Discrete												
H4SSS03	10/23/2007	0.25-0.75	48.8 ± 20.7	29.3 ± 5.98	---	---	---	---	---	---	---	
H4SSS05	10/23/2007	0.25-0.75	66.9 ± 23.5	38.7 ± 6.79	---	---	---	---	---	---	---	
PHASE IV VLT HEAP LEACH PAD: Soil Boring Composite												
H4VSL01	9/27/2007	0-50	60.9 ± 22.4	30.8 ± 6.13	0.236 ± 0.141	1.28 ± 0.256	2.25 ± 0.367	0.8 ± 0.183	1.97 ± 0.371	0.132 ± 0.087	1.63 ± 0.324	88.5
H4VSL02	10/5/2007	50-107	13.2 ± 13.3	19 ± 4.91	ND ± 0.144	1.77 ± 0.328	1.82 ± 0.324	1.96 ± 0.341	2.22 ± 0.382	0.0651 ± 0.0567	1.77 ± 0.323	91.5
H4VSL03	10/6/2007	0-50	93.6 ± 29.3	48.3 ± 7.82	ND ± 0.146	1.15 ± 0.253	2.64 ± 0.43	0.953 ± 0.215	1.68 ± 0.308	0.132 ± 0.0752	1.49 ± 0.283	89.1
PHASE IV VLT HEAP LEACH PAD: Surface Discrete												
H4VSS04	10/26/2007	0.25-0.75	50.6 ± 20	33.3 ± 6.15	---	---	---	---	---	---	---	
VLT SOIL: Surface Discrete												
CAPSS01	10/29/2007	0.25-0.75	25.5 ± 16.5	34.5 ± 6.45	---	---	---	---	---	---	---	
CAPSS03	10/29/2007	0.25-0.75	40 ± 17.9	29.7 ± 5.75	---	---	---	---	---	---	---	
CAPSS04	10/29/2007	0.25-0.75	36.3 ± 18.1	27.9 ± 5.79	---	---	---	---	---	---	---	

APPENDIX D

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

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Notes:

Bolded values exceed Residential PRG

All results listed as result (MDC)

1 - depth in feet below ground surface

MDC - Minimum Detectable Concentration

pCi/g - picocuries per gram

ND - Not detected at MDC

unc - radiological measurement uncertainty

PRG - Preliminary Remediation Goal (EPA, 2004)

-- - no PRG available

APPENDIX D

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

DRAFT

Parameter:		Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	
Industrial PRG:		920,000	410	1.6 (ca) 260 (nc)	67,000	1,900	450	--	--	1,900	41,000	310,000	--	--	19,000	--	5,100	20,000	--	
Residential PRG:		76,000	31	0.39 (ca) 22 (nc)	5,400	150	37	--	--	900	3,100	23,000	--	--	1,800	--	390	1,600	--	
Units:		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
Location	Sample Date	Depth ¹	Analytical Results																	
PHASE I/II HEAP LEACH PAD: Soil Boring Composite																				
H12SU01	10/11/2007	0-50	5,340	1.7 J	9.5 J	55	0.15 UJ	1.2 J	3,240	5.7	2.8 J	1,080	20,300	3	4,310	43.9	0.13	---	4.2 U	1,120
H12SU01 (FD)	10/11/2007	0-50	5,160	0.85 J	5.7 J	62.5	0.12 UJ	1 UJ	2,690	4.8	2.3 J	1,040	19,600	2.4	4,480	41.6	0.15	---	4.2 U	1,260
H12SU02	10/10/2007	0-50	5,920	1.4 J	8.6 J	45.5	0.14 UJ	0.75 UJ	3,310	3.9	1.7 J	955	15,700	2.7	5,140	44.2	0.17	---	4.3 U	963 J
H12SU02 (FD)	10/10/2007	50-77	5,970	1 J	7.7	50.6	0.15 UJ	0.7 UJ	3,250	4.1	1.5 J	875	14,800	2.8	4,620	40.2	0.2	---	1.2 UJ	1,110 J
PHASE I/II HEAP LEACH PAD: Surface Discrete																				
H12SS01	10/23/2007	0.25-0.75	7,860	1.3 J	22.6	68.3	0.36 J	0.52 U	3,720	2.8 J	5.8	2,830 J	19,400	6.1	6,290	71.7	0.18	---	6.5	708
H12SS01 (FD)	10/23/2007	0.25-0.75	11,000	1 J	26	81	0.39	1 U	6,700	5	4.7	2,100	24,000	5.8	7,500	66	0.12	3.7 J	7.3	830
H12SS02	10/23/2007	0.25-0.75	7,760	1.1 J	21.4	74.7	0.35 J	0.53 U	5,430	2.5 J	7.3	1,450 J	14,400	3.9	5,950	78.4	0.17	---	6.3	490 J
H12SS03	10/23/2007	0.25-0.75	5,440	1.5 J	9.1	60.6	0.27 J	0.51 U	6,670	3.3 J	3.2 J	1,100 J	8,510	4.2	3,230	28.7	1	---	4.5	803
H12SS04	10/23/2007	0.25-0.75	5,770	0.36 J	12.5	73	0.28 J	0.54 U	5,540	2.1 J	2.9 J	1,040 J	20,100	7	3,560	33.8	0.11	---	3.5 J	1,300
PHASE III 4X HEAP LEACH PAD: Soil Boring Composite																				
H3XSU01	10/16/2007	0-50	4,360	0.69 J	1.7 J	30.9 J	0.11 UJ	0.49 UJ	2,530	3	3.3 J	1,570	10,100	2 J	4,160	55.5	0.098 J	---	2.8 UJ	925 J
H3XSU02	10/17/2007	50-67	3,910	0.47 J	3.7	34.2 J	0.13 UJ	0.5 UJ	1,990	2.7	2.1 J	554	10,900	1.8 J	2,930	35.2	0.33	---	1.3 UJ	860 J
H3XSU02 (FD)	10/17/2007	50-67	4,050	0.7 J	6.8	32.1 J	0.15 UJ	0.55 UJ	2,180	2.6	2.2 J	617	11,100	1.7 J	3,210	47.8	0.22	---	1.7 UJ	1,310
H3XSU03	10/17/2007	50-67	8,210	1.7 J	7.5	71.2	0.33 UJ	0.97 UJ	3,630	8.2	5.8 J	2,060	18,900	2.5	6,620	73	0.42	---	4.4 UJ	1,230
PHASE III 4X HEAP LEACH PAD: Surface Discrete																				
H3XSS01	10/25/2007	0.25-0.75	11,800	0.28 J	12	81.4	0.49 J	0.51 U	11,200	19.1 J	12.3	3,090 J	20,600	3.4	7,710	118	0.033 J	---	12.1	1,360
H3XSS02	10/25/2007	0.25-0.75	11,500	6.2 J	24.8	105	0.55	0.51 U	16,800	5.1 J	9.1	8,060 J	23,800	6	6,490	123	0.83	---	9.4	1,650
H3XSS03	10/25/2007	0.25-0.75	7,600	1 J	7.8	60.4	0.25 J	0.52 U	5,160	7.7 J	5.2	520 J	12,400	5.5	5,350	55.2	0.31	---	7.5	1,300
H3XSS04	10/25/2007	0.25-0.75	5,850	0.48 J	6.8	44.1	0.19 J	0.51 U	3,270	3.9 J	3.5 J	540 J	10,500	6.5	4,710	32.9	0.35	---	5	1,360
H3XSS05	10/25/2007	0.25-0.75	4,950	2.7 J	13	65.7	0.23 J	0.52 U	10,200	4.5 J	4 J	655 J	12,400	6.7	3,230	41.8	0.36	---	3.9 J	1,420
H3XSS06	10/25/2007	0.25-0.75	13,700	1.5 J	19.4	110	0.52 J	0.67 U	48,300	11 J	13.3	1,080 J	24,700	53.2	8,730	125	1.8	---	11.5	3,110
H3XSS07	10/25/2007	0.25-0.75	6,810	1.2 J	9.3	70.8	0.23 J	0.52 U	4,520	4.9 J	4.6 J	539 J	12,200	7.9	5,060	48.7	0.48	---	6	1,390
H3XSS08	10/25/2007	0.25-0.75	7,690	0.53 J	7.7	60.4	0.2 J	0.53 U	1,990	4.5 J	5.1 J	585 J	13,000	4.9	6,960	56	0.47	---	7.1	1,670
H3XSS08 (FD)	10/25/2007	0.25-0.75	8,800	4 U	8.5	58	0.22	1 U	2,600	6	4.2	480	16,000	4.5	7,300	56	0.53	4 J	7.8	1,800
PHASE III SOUTH HEAP LEACH PAD: Soil Boring Composite																				
H3SSU01	9/25/2007	0-50	5,270	2.2 J	8.8 J-	65.7	0.2 UJ	0.76 J	4,320	4.3	2.7 J	947	13,800	3.8	3,830	42.9	0.5 J-	---	4.4 U	998 J
H3SSU02	10/7/2007	50-100	5,520	1.1 J	6.1 J	50.1	0.18 UJ	0.67 UJ	3,800	4.6	4.5 J	619	13,800	3	4,300	59.1	1.8	---	1.7 J	984 J
H3SSU03	10/6/2007	100-117	5,790	0.86 J	3.9 J	60.2	0.16 UJ	1.7 J	2,150	7.7	3.9 J	905	29,800	2.5	3,970	65	0.092 UJ	---	4.3 U	1,620
H3SSU04	9/26/2007	50-100																		

APPENDIX D

DRAFT

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

Parameter:		Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	
Industrial PRG:		920,000	410	1.6 (ca) 260 (nc)	67,000	1,900	450	--	--	1,900	41,000	310,000	--	--	19,000	--	5,100	20,000	--	
Residential PRG:		76,000	31	0.39 (ca) 22 (nc)	5,400	150	37	--	--	900	3,100	23,000	--	--	1,800	--	390	1,600	--	
Units:		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
Location	Sample Date	Depth ¹	Analytical Results																	
PHASE IV SLOT HEAP LEACH PAD: Soil Boring Composite																				
H4SSU01	10/8/2007	50-97	7,420	1.8 J	8.3 J	86.4	0.25 UJ	0.81 UJ	8,090	5.3	5.2 J	1,180	15,600	3.5	4,680	77.6	0.31	---	1.7 J	1,390
H4SSU01	10/8/2007	0-50	6,940	0.87 J	5.3 J	61.7	0.22 UJ	0.66 UJ	4,660	4.5	4.5 J	681	13,300	3.2	6,000	62.9	0.17	---	2.4 J	1,650
H4SSU02	10/9/2007	0-50	5,500	1.5 J	4.4 J	52.5	0.2 UJ	0.6 UJ	3,610	6.8	4.3 J	756	12,600	2.6	4,410	54.7	0.27	---	3 J	915 J
H4SSU03	10/9/2007	50-77	5,780	1.2 J	5.5 J	74.9	0.19 UJ	0.82 UJ	3,190	4.4	4 J	856	15,400	3.1	4,770	57.7	0.093 UJ	---	1.3 J	1,500
H4SSU03 (FD)	10/9/2007	50-77	6,280	1.2 J	11.5 J	56.6	0.22 UJ	1.1 UJ	4,630	5.5	4.3 J	946	21,200	3.5	4,860	63.2	0.14	---	0.35 J	1,590
H4SSU04	10/9/2007	0-50	6,470	4.5 J	8.6 J	101	0.2 UJ	0.68 UJ	12,800	4.6	3.8 J	1,010	14,200	3.9	4,310	53.1	1.3	---	0.63 J	1,090
PHASE IV SLOT HEAP LEACH PAD: Surface Discrete																				
H4SSS01	10/24/2007	0.25-0.75	6,920	1.5 J	8.7	47.1	0.15 J	0.53 U	1,810	4.6	3.6 UJ	543	11,600	3.6 J	5,530	37	0.81	---	6.1	684
H4SSS02	10/23/2007	0.25-0.75	8,560	0.57 J	10.2	62.8	0.34 J	0.53 U	3,450	4.9	6.9	973	16,300	5.8 J	4,770	66.8	0.29	---	6.4	1,110
H4SSS03	10/23/2007	0.25-0.75	7,990	2.1 J	9.1	47.1	0.25 J	0.52 U	5,480	6.2	6.2	594	11,100	8.1 J	6,160	47.9	1.1	---	6.8	697
H4SSS04	10/23/2007	0.25-0.75	7,750	7.2	15.3	45.6	0.31 J	0.53 U	4,600	5.5	6.1	1,030	11,500	16.4 J	5,300	36.4	2.7	---	6.5	507 J
H4SSS05	10/23/2007	0.25-0.75	5,990	0.78 J	12	54.3	0.25 J	0.54 U	8,080	2.3	2.8 UJ	668	14,100	20.4 J	3,990	38.3	0.31	---	3.1 J	768
H4SSS06	10/24/2007	0.25-0.75	12,500	4.6 J	31.6	106	0.73	0.52 U	8,320	7.6	5.6	3,690	24,100	8.2 J	5,850	69.4	0.72	---	7.9	1,460
H4SSS06 (FD)	10/24/2007	0.25-0.75	14,000	6.9	28	120	0.74	1 U	7,500	9.7	5.9	3,600	27,000	7.6	6,200	75	0.66	19	8.9	1,700
H4SSS07	10/24/2007	0.25-0.75	8,480	1.8 J	12.8	87.9	0.4 J	0.52 U	4,820	4.2	4.4 UJ	1,320	18,000	7.1 J	5,660	57.9	0.94	---	5.9	1,080
H4SSS08	10/24/2007	0.25-0.75	7,430	0.87 J	17.1	72.6	0.27 J	0.52 U	7,690	2.9	4.7 UJ	909	17,300	9.3 J	5,140	49.7	0.29	---	4.7	1,020
H4SSS09	10/24/2007	0.25-0.75	7,410	0.95 J	13.5	86.2	0.36 J	0.54 U	4,540	6.6	4.5 UJ	614	17,400	6.2 J	3,920	49.4	0.44	---	5.3	1,510
H4SSS10	10/24/2007	0.25-0.75	11,100	4.1 J	22.5	221	0.69	0.51 U	13,800	3.9	23.2	7,360	17,900	5 J	6,610	152	5.1	---	8	936
PHASE IV VLT HEAP LEACH PAD: Soil Boring Composite																				
H4VSU01	9/27/2007	50-107	6,700	0.75 J	3 J-	49	0.3 UJ	0.54 J	6,400	4.7	5.7 J	702	10,400	2.8	6,360	105	0.086 U	---	2.9 J	1,680
H4VSU01	9/27/2007	0-50	6,190	1.1 J	4.5 J-	47.4	0.22 UJ	0.47 J	3,200	4.8	5.6 J	579	9,610	2.2	5,720	63.9	0.34 J-	---	3.9 J	1,600
H4VSU02	10/2/2007	0-50	7,610	2.3 J	9.6 J	51.4	0.25 UJ	0.86 UJ	3,760	4.9	5.8 J	1,020	17,700	3.8	6,460	71.9	0.37	---	2.1 J	1,040 J
H4VSU02	10/5/2007	50-107	7,970	0.58 J	2.4 J	54.7	0.35 UJ	0.55 UJ	4,420	9	6.1 J	906	11,200	2.1 J	8,030	74.9	0.12	---	8 J	2,310
H4VSU03	10/6/2007	0-50	6,370	0.58 J	3.8 J	34.5 UJ	0.2 UJ	0.53 UJ	3,020	4.1	6.2 J	686	12,100	2.9	5,820	75.9	0.24	---	3.5 J	1,320
H4VSU03	10/6/2007	50-87	7,690	0.85 J	2.3 J	53.8	0.29 UJ	0.56 UJ	3,820	9.7	6.3 J	681	11,100	2.1 J	8,000	83.8	0.076 UJ	---	7.5 J	1,740
H4VSU03 (FD)	10/6/2007	0-50	6,020	0.9 J	4.4 J	39.5 UJ	0.19 UJ	0.54 UJ	2,610	3.7	6.2 J	645	12,200	3.8	5,380	73.5	0.23	---	3.7 J	1,140
PHASE IV VLT HEAP LEACH PAD: Surface Discrete																				
H4VSS01	10/26/2007	0.25-0.75	13,700	0.75 J	9.4	39.7	0.69	0.03 J	3,810	5.1	51.6	10,400	13,400	5.5 J	17,300	336	0.029 J	---	31.4	1,080
H4VSS01 (FD)	10/26/2007	0.25-0.75	8,200	4 U	8.4	49	0.25	1 U	4,400	5.6	5.1	1,000	15,000	5.7	6,700	66	0.57	4 J	8	1,300
H4VSS02	1																			

APPENDIX D

DRAFT

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

Parameter:	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	
Industrial PRG:	920,000	410	1.6 (ca) 260 (nc)	67,000	1,900	450	--	--	1,900	41,000	310,000	--	--	19,000	--	5,100	20,000	--	
Residential PRG:	76,000	31	0.39 (ca) 22 (nc)	5,400	150	37	--	--	900	3,100	23,000	--	--	1,800	--	390	1,600	--	
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
Location	Sample Date	Depth ¹	Analytical Results																
VLT SOIL: Surface Discrete																			
CAPSS03	10/29/2007	0.25-0.75	1,970	1.5 J	13.1 J	104	0.06 J	0.52 U	2,570	2.8 J	2 J	6,260	30,000	271	735	20	0.81	---	1.1 J 1,980
CAPSS04	10/29/2007	0.25-0.75	7,500	0.81 J	29.3 J	58.8	0.36 J	0.51 U	6,140	15.6 J	4.8 J	22,100	20,500	39.1	4,760	65.1	0.68	---	16 770

Notes:

Bolted values exceed Industrial or Residential PRG

¹ - depth in feet below ground surface

mg/Kg - milligrams per kilogram

J - Estimated result

U - Not detected at reporting limit

FD - Field Duplicate

PRG - Preliminary Remediation Goal (EPA, 2004)

--- - no PRG available

(ca) - Cancer PRG

(nc) - Non-cancer PRG

APPENDIX D

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

Parameter:	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc		
Industrial PRG:	5,100	5,100	--	67	1,000	310,000		
Residential PRG:	390	390	--	5.2	78	23,000		
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		
Location	Sample Date	Depth ¹	Analytical Results					
PHASE I/II HEAP LEACH PAD: Soil Boring Composite								
H12SU01	10/11/2007	0-50	3.7 UJ	1.1 U	120 J	2.6 U	26.8	5.8 UJ
H12SU01 (FD)	10/11/2007	0-50	3.7 UJ	1.1 U	115 J	2.6 U	22.5	5.2 UJ
H12SU02	10/10/2007	0-50	3.8 UJ	1.1 U	134 J	2.7 U	23	8.2 UJ
H12SU02 (FD)	10/10/2007	50-77	4.3 UJ	1.2 U	110 J	3.1 UJ	22.4	8.2 J
PHASE I/II HEAP LEACH PAD: Surface Discrete								
H12SS01	10/23/2007	0.25-0.75	3.8 J	0.17 J	206 J	0.99 J	23.8	13.5
H12SS01 (FD)	10/23/2007	0.25-0.75	3.6	2 U	210	10 U	30	12
H12SS02	10/23/2007	0.25-0.75	3.7 J	1.1 U	346 J	0.7 J	14.1	13
H12SS03	10/23/2007	0.25-0.75	3.8 J	1 U	117 J	0.43 J	12.1	7.3
H12SS04	10/23/2007	0.25-0.75	4.1 J	0.18 J	154 J	0.92 J	23.2	8.7
PHASE III 4X HEAP LEACH PAD: Soil Boring Composite								
H3XSU01	10/16/2007	0-50	3.8 UJ	1.1 U	78.6 J	2.7 UJ	12.7	11.5 J
H3XSU02	10/17/2007	50-67	4.3 UJ	1.2 U	85.7 J	3.1 UJ	16	6.1 J
H3XSU02 (FD)	10/17/2007	50-67	4 UJ	1.2 U	93.2 J	2.9 UJ	17.3	8.7 J
H3XSU03	10/17/2007	50-67	3.8 UJ	1.1 U	160 J	2.7 UJ	31.8	7.5 J
PHASE III 4X HEAP LEACH PAD: Surface Discrete								
H3XSS01	10/25/2007	0.25-0.75	3.5 J	0.09 J	337 J	0.52 J	50.3	12.2
H3XSS02	10/25/2007	0.25-0.75	5.2 J	0.56 J	102 J	1 J	38.1	24.2
H3XSS03	10/25/2007	0.25-0.75	3.1 J	1 U	262 J	0.82 J	18.9	13.2
H3XSS04	10/25/2007	0.25-0.75	5.5 J	0.13 J	135 J	0.7 J	19.1	9.3
H3XSS05	10/25/2007	0.25-0.75	2.9 J	0.12 J	321 J	0.74 J	18.5	8.3
H3XSS06	10/25/2007	0.25-0.75	9.5 J	0.38 J	795	1.2 J	18.8	23.5
H3XSS07	10/25/2007	0.25-0.75	3.9 J	0.2 J	194 J	0.75 J	17.6	12.2
H3XSS08	10/25/2007	0.25-0.75	6.1 J	0.23 J	99.5 J	0.82 J	22.7	14.5
H3XSS08 (FD)	10/25/2007	0.25-0.75	5.4	2 U	91	10 U	30	14
PHASE III SOUTH HEAP LEACH PAD: Soil Boring Composite								
H3SSU01	9/25/2007	0-50	3.8 UJ	1.1 U	143 J	2.7 U	21.2	7.1 J
H3SSU02	10/7/2007	50-100	3.8 UJ	1.1 U	177 J	2.7 U	23.4	8.2 UJ
H3SSU03	10/6/2007	100-117	3.8 UJ	1.1 U	172 J	2.7 U	28.6	7.9 UJ
H3SSU04	9/26/2007	50-100	3.8 UJ	1.1 U	163 J	2.7 U	27.2	7.7 J
PHASE III SOUTH HEAP LEACH PAD: Surface Discrete								
H3SSS01	10/24/2007	0.25-0.75	4.3 J	0.25 J	410 J	0.99 J	20.8	14.6
H3SSS02	10/25/2007	0.25-0.75	3.5 J	0.12 J	283 J	0.99 J	27.4	13.4
H3SSS03	10/25/2007	0.25-0.75	3.7 J	0.29 J	143 J	0.89 J	32	10.6
H3SSS04	10/25/2007	0.25-0.75	1.6 J	0.13 J	277 J	0.81 J	25.5	11.4
H3SSS04 (FD)	10/25/2007	0.25-0.75	1.3 J	2 U	270	10 U	27	11
H3SSS05	10/24/2007	0.25-0.75	4.6 J	0.2 J	175 J	1.2 J	19.9	10.8
H3SSS06	10/25/2007	0.25-0.75	2.3 J	1 U	100 J	0.62 J	18	13.1
H3SSS07	10/24/2007	0.25-0.75	3.4 J	0.11 J	415 J	0.91 J	15.2	21.2
H3SSS08	10/24/2007	0.25-0.75	6.3 J	0.41 J	194 J	1.4 J	24.3	10.9

APPENDIX D

DRAFT

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

Parameter:	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc		
Industrial PRG:	5,100	5,100	--	67	1,000	310,000		
Residential PRG:	390	390	--	5.2	78	23,000		
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		
Location	Sample Date	Depth ¹	Analytical Results					
PHASE IV SLOT HEAP LEACH PAD: Soil Boring Composite								
H4SSU01	10/8/2007	50-97	3.9 UJ	1.1 U	296 J	2.8 U	27.8	12.9 UJ
H4SSU01	10/8/2007	0-50	3.8 UJ	1.1 U	188 J	2.7 U	24.6	11.3 UJ
H4SSU02	10/9/2007	0-50	3.8 UJ	1.1 U	232 J	2.7 U	15.7	10 UJ
H4SSU03	10/9/2007	50-77	0.52 J	1.1 U	168 J	2.7 U	25.6	9.4 UJ
H4SSU03 (FD)	10/9/2007	50-77	3.8 UJ	1.1 U	212 J	2.7 U	29	10.3 UJ
H4SSU04	10/9/2007	0-50	3.8 UJ	1.1 U	167 J	2.7 U	22.7	8.7 UJ
PHASE IV SLOT HEAP LEACH PAD: Surface Discrete								
H4SSS01	10/24/2007	0.25-0.75	5.2	0.15 J	64.2 J	0.68 J	18.9	9.3
H4SSS02	10/23/2007	0.25-0.75	4.9	0.12 J	433 J	0.9 J	17.8	13.4
H4SSS03	10/23/2007	0.25-0.75	4.9	0.11 J	233 J	0.68 J	19.8	7.7
H4SSS04	10/23/2007	0.25-0.75	6.9	0.22 J	174 J	0.6 J	20.7	7.2
H4SSS05	10/23/2007	0.25-0.75	4.8	0.15 J	131 J	0.76 J	13.1	8.6
H4SSS06	10/24/2007	0.25-0.75	5	0.22 J	298 J	1.1 J	46.8	22.4
H4SSS06 (FD)	10/24/2007	0.25-0.75	4.6	2 U	290	10 U	53	22
H4SSS07	10/24/2007	0.25-0.75	4.6	0.11 J	93.8 J	1 J	21.1	13.5
H4SSS08	10/24/2007	0.25-0.75	5.2	0.1 J	171 J	0.97 J	23.6	10.6
H4SSS09	10/24/2007	0.25-0.75	3.9	0.13 J	181 J	0.95 J	19.7	12.2
H4SSS10	10/24/2007	0.25-0.75	2.2 UJ	0.32 J	338 J	0.85 J	33.9	18.2
PHASE IV VLT HEAP LEACH PAD: Soil Boring Composite								
H4VSV01	9/27/2007	50-107	3.8 UJ	1.1 U	190 J	2.7 U	24	8.6 J
H4VSV01	9/27/2007	0-50	3.8 UJ	1.1 U	170 J	2.7 U	19	10.1 J
H4VSV02	10/2/2007	0-50	3.8 UJ	1.1 U	182 J	2.7 U	24.6	11.4 UJ
H4VSV02	10/5/2007	50-107	3.8 UJ	1.1 U	205 J	2.7 U	29.8	8.7 UJ
H4VSV03	10/6/2007	0-50	0.47 J	1.1 U	227 J	2.7 U	16.5	12.6 UJ
H4VSV03	10/6/2007	50-87	3.8 UJ	1.1 U	214 J	2.7 U	30.5	10.1 UJ
H4VSV03 (FD)	10/6/2007	0-50	3.9 UJ	1.1 U	211 J	2.8 U	18.5	11.2 UJ
PHASE IV VLT HEAP LEACH PAD: Surface Discrete								
H4VSS01	10/26/2007	0.25-0.75	6.1	0.28 J	990	0.78 J	16.3	62.5
H4VSS01 (FD)	10/26/2007	0.25-0.75	5.1	2 U	130	10 U	21	16
H4VSS02	10/26/2007	0.25-0.75	3.9	0.16 J	440 J	1 J	25	23.6
H4VSS03	10/26/2007	0.25-0.75	3.3 UJ	1.1 U	290 J	0.54 J	10.8	11.2
H4VSS04	10/26/2007	0.25-0.75	5.6	1.1 U	822	1.3 J	15	20.8
H4VSS05	10/26/2007	0.25-0.75	4.7	0.12 J	424 J	1 J	22.4	15.9
H4VSS06	10/26/2007	0.25-0.75	4.5	0.17 J	155 J	0.75 J	18.1	10.8
H4VSS07	10/26/2007	0.25-0.75	4.7	1.1 U	614	1 J	18	26.2
H4VSS08	10/26/2007	0.25-0.75	3.8	0.27 J	358 J	0.77 J	27	14
H4VSS09	10/26/2007	0.25-0.75	5.7	0.25 J	343 J	1.2 J	17.9	16.8
H4VSS10	10/26/2007	0.25-0.75	5.3	1.5 U	3,410	2.5 J	9.7	72.6
VLT SOIL: Surface Discrete								
CAPSS01	10/29/2007	0.25-0.75	6.6 J	0.79 J	207 J	0.86 J	10.2	20.5
CAPSS02	10/26/2007	0.25-0.75	83.3 J	1.1	133 J	6.6	21.7	108

APPENDIX D

DRAFT

Summary of HLP Material Analytical Results

Arimetco Heap Leach Pads, Anaconda Yerington Mine

Parameter:	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Industrial PRG:	5,100	5,100	--	67	1,000	310,000
Residential PRG:	390	390	--	5.2	78	23,000
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Location	Sample Date	Depth ¹	Analytical Results			

VLT SOIL: Surface Discrete

Location	Sample Date	Depth ¹	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
CAPSS03	10/29/2007	0.25-0.75	13.8 J	1.9	1,020	2 J	8.5	13.2
CAPSS04	10/29/2007	0.25-0.75	9.2 J	0.69 J	125 J	1.2 J	17.9	11.1

Notes:

Bolded values exceed Industrial or Residential PRG

¹ - depth in feet below ground surface

mg/Kg - milligrams per kilogram

J - Estimated result

U - Not detected at reporting limit

FD - Field Duplicate

PRG - Preliminary Remediation Goal (EPA, 2004)

-- - no PRG available

(ca) - Cancer PRG

(nc) - Non-cancer PRG

Table 2-2 Summary of Planned versus Actual Samples Collected, by Analysis
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Soil Analysis	Planned	Actual	Comments
Inorganics, TPH, and Physical Properties			
Twenty-three TAL Metals	60	64 (10 FD)	Five FD samples were submitted for analyses on 1/28/2008
TPH	19	23 (3 FD)	
Bulk Rietveld X-ray Diffraction (multiple size fraction)	17	0	Senior geochemist reviewed ABA and NAG data and determined that x-ray diffraction analyses were not required.
Whole Rock	17	0	Senior geochemist reviewed ABA and NAG data and determined that whole-rock analyses were not required.
SPLP	33	26 (6 FD)	Two FD samples were submitted for analyses 1/28/2008
Inorganic Analyses	29	23	
Radiological			
Radium 226	42	29	Partial data pending from laboratory. Outstanding data will be presented in a technical memorandum and submitted as an addendum to the RI. There were fewer samples collected because drilling depths were less than planned.
Radium 228	42	29	Partial data pending from laboratory. Outstanding data will be presented in a technical memorandum and submitted as an addendum to the RI. There were fewer samples collected because drilling depths were less than planned.
Isotopic Thorium	42	29	Fewer samples collected because drilling depths were less than planned.
Total Thorium	42	29	Fewer samples collected because drilling depths were less than planned.
Isotopic Ur2anum	42	29	Fewer samples collected because drilling depths were less than planned.
Total Uranium	42	29	Fewer samples collected because drilling depths were less than planned.
Gross Alpha	42	29	Fewer samples collected because drilling depths were less than planned.
Gross Beta	42	29	Fewer samples collected because drilling depths were less than planned.
Gross Gamma	42	29	Partial data pending from laboratory; awaiting description from laboratory regarding how gross gamma analyses were performed and reviewed. There were fewer samples collected because drilling depths were less than planned.
Agricultural			
Sodium Adsorption Ratio	12	13	
Calcium, Magnesium, and Sodium	12	13	
Nitrogen, Phosphorous, and Potassium	12	13	

Table 2-2 Summary of Planned versus Actual Samples Collected, by Analysis
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Soil Analysis	Planned	Actual	Comments
Boron and Chlorine	12	13	
Geochemical			
Nevada MWMP	11	12	
NAG	33	25	Fewer samples collected because drilling depths were less than planned.
ABA	33	25	Fewer samples collected because drilling depths were less than planned.
Geotechnical			
Direct Shear Tests (ASTM D3080)	17	18	
Wet/Dry Densities (ASTM D2937)	13	18	Number of samples determined by actual field conditions.
Moisture Content (ASTM D2216-98)	95	64	Reduced by the senior geotechnical advisor because of the observed consistency of Group A HLP materials.
Moisture Retention Capacity (ASTM D2325 or D3152)	31	0	Senior geotechnical advisor determined that the analysis was not necessary at this time.
Compaction Curves (ASTM D1557)	113	23	Reduced by the senior geotechnical advisor because of the observed consistency of Group A HLP materials.
Grain Size (ASTM D422/C136)	113	40	Reduced by the senior geotechnical advisor because of the observed consistency of Group A HLP materials.
Specific Gravity (ASTM D854)	113	23	Reduced by the senior geotechnical advisor because of the observed consistency of Group A HLP materials.

Notes:

ASTM = American Society for Testing and Materials

NAG = net acid generation

SPLP = synthetic precipitation leaching procedure

TAL = target analyte list

TPH = total petroleum hydrocarbons

Table 4-3 Summary of Detections Heap Leach Pad Material Samples
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Analyte	Units	Number of Results	Number of Detects	Frequency of Detection (%)	Range of Detected Concentrations	Geomean	Standard Deviation
Geochemicals							
Acid Generation Potential (calc on Sulfur total)	t CaCO ₃ /kt	25	25	100	12 to 37	21.5	5.34
Acid Neutralization Potential (calc)	t CaCO ₃ /kt	25	9	36	3 to 26	1.27	6.21
Acid-base Accounting (calc on Sulfur total)	t CaCO ₃ /kt	25	0	0	Non-detect	0.50	0.00
NAG Procedure	kg H ₂ SO ₄ /t	6	6	100	4 to 6	4.78	0.753
Neutralization Potential as CaCO ₃	%	25	9	36	0.3 to 2.6	0.127	0.621
Sulfur Organic Residual	%	25	23	92	0.01 to 0.05	0.0222	0.014
Sulfur Pyritic Sulfide	%	25	17	68	0.01 to 0.02	0.00871	0.00455
Sulfur, Sulfate	%	25	25	100	0.36 to 1.17	0.651	0.173
Sulfur, Total	%	25	25	100	0.39 to 1.19	0.686	0.171
Total Sulfur minus Sulfate	%	25	25	100	0.01 to 0.07	0.0296	0.017
Metals							
Aluminum	mg/kg	64	64	100	1,970 to 27,100	7,250	3,420
Antimony	mg/kg	64	64	100	.25 to 7.2	1.03	1.35
Arsenic	mg/kg	64	64	100	1.7 to 119	9.23	14.9
Barium	mg/kg	64	63	98.44	30.9 to 283	62.8	39.6
Beryllium	mg/kg	64	44	68.75	0.06 to 2.6	0.291	0.315
Cadmium	mg/kg	64	8	12.5	0.03 to 1.7	0.278	0.272
Calcium	mg/kg	64	64	100	1,540 to 60,700	5,250	9,340
Chromium	mg/kg	64	64	100	2.1 to 24.2	5.00	3.88
Cobalt	mg/kg	64	57	89.06	1.5 to 69	5.45	10.9
Copper	mg/kg	64	64	100	200 to 22,100	1,250	3,430
Iron	mg/kg	64	64	100	8,510 to 61,100	16,000	7,680
Lead	mg/kg	64	64	100	1.7 to 271	5.45	34.3
Magnesium	mg/kg	64	64	100	735 to 19,800	5,270	2,860
Manganese	mg/kg	64	64	100	20 to 825	65.1	105
Mercury	mg/kg	64	59	92.19	0.029 to 20.2	0.305	2.57
Molybdenum	mg/kg	5	5	100	2.7 to 19	4.97	6.91
Nickel	mg/kg	64	56	87.5	0.35 to 49.4	5.02	8.35
Potassium	mg/kg	64	64	100	448 to 14,600	1,280	1,790

Table 4-3 Summary of Detections Heap Leach Pad Material Samples
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Analyte	Units	Number of Results	Number of Detects	Frequency of Detection (%)	Range of Detected Concentrations	Geomean	Standard Deviation
Selenium	mg/kg	64	44	68.75	0.47 to 83.3	3.34	10.2
Silver	mg/kg	64	36	56.25	0.09 to 1.9	0.315	0.277
Sodium	mg/kg	64	64	100	64.2 to 3,410	225	441
Thallium	mg/kg	64	44	68.75	0.43 to 6.6	1.03	0.768
Vanadium	mg/kg	64	64	100	8.5 to 53	20.7	7.71
Zinc	mg/kg	64	51	79.69	6.1 to 108	10.1	16.6
TPH							
As diesel	mg/kg	19	13	68.42	2.9 to 170	10.2	41.6
As kerosene	mg/kg	23 0	0	0	Non-detect	8.27	33.1
As motor oil	mg/kg	15	10	66.67	13 to 85	22.1	22.1

Notes:

CaCO_3 = calcium carbonate

$\text{kg H}_2\text{SO}_4/\text{t}$ = kilograms of hydrogen sulfide per ton

$\text{t CaCO}_3/\text{kt}$ = tons of calcium carbonate per kiloton

Table 4-6 Summary of Acid-Base Accounting Results for Heap Leach Pad Samples
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Sample ID	HLP	Acid Generation Potential (calculated on sulfur total)	Acid Neutralization Potential (calculated)	Acid-base Accounting (calculated on sulfur total)	ABA (calculated on sulfur total)	ABA (calculated on sulfide sulfur)	NPR (calculated on sulfide sulfur)	Neutralization Potential as CaCO ₃	Neutralization Potential (lab qualifier)	Sulfur Organic Residual	Sulfur Organic Residual (lab qualifier)	Sulfur Pyritic Sulfide (lab qualifier)	Acid Generation Potential (calculated on sulfide sulfur)	Sulfur Pyritic Sulfide (lab qualifier)	Sulfur Sulfate	Sulfur Total	Acid Producing Potential	Total Sulfur Minus Sulfate
H12SU01-1-8	PHASE I/II	12	0	-12	-12.1	-0.2125	0.008	0.1	U	0.02		0.01	0.3125		0.36	0.39	12.2	0.03
H12SU01-2-8	PHASE I/II	19	0	-19	-19.3	-0.2125	0.005	0.1	U	0.04		0.01	0.3125		0.57	0.62	19.4	0.05
H12SU02-1-8	PHASE I/II	16	0	-16	-15.5	-0.2125	0.006	0.1	U	0.02		0.01	0.3125	U	0.49	0.5	15.6	0.01
H12SU02-2-8	PHASE I/II	16	4	-12	-15.5	0.0875	0.025	0.4		0.02		0.01	0.3125		0.48	0.51	15.9	0.03
H3XSU01-1-8	PHASE III 4X	19	7	-12	-18.4	0.3875	0.037	0.7		0.03		0.01	0.3125		0.57	0.61	19.1	0.04
H3XSU01-2-8	PHASE III 4X	24	0	-24	-23.7	-0.2125	0.004	0.1	U	0.02		0.01	0.3125	U	0.74	0.76	23.8	0.02
H3XSU02-2-8	PHASE III 4X	18	12	-6	-16.3	0.8875	0.069	1.2		0.03		0.01	0.3125	U	0.53	0.56	17.5	0.03
H3XSU03-1-8	PHASE III 4X	19	6	-13	-18.5	0.2875	0.031	0.6		0.01	U	0.01	0.3125		0.6	0.61	19.1	0.01
H3SSU01-1-8	PHASE III South	23	0	-23	-22.4	-0.2125	0.004	0.1	U	0.02		0.01	0.3125	U	0.7	0.72	22.5	0.02
H3SSU01-2-8	PHASE III South	23	0	-23	-22.7	-0.2125	0.004	0.1	U	0.03		0.01	0.3125		0.69	0.73	22.8	0.04
H3SSU02-2-8	PHASE III South	21	0	-21	-20.5	-0.2125	0.005	0.1	U	0.02		0.01	0.3125	U	0.64	0.66	20.6	0.02
H3SSU02-3-8	PHASE III South	23	0	-23	-23.3	-0.2125	0.004	0.1	U	0.02		0.01	0.3125		0.72	0.75	23.4	0.03
H3SSU03-1-8	PHASE III South	28	0	-28	-27.7	-0.2125	0.004	0.1	U	0.04		0.01	0.3125		0.84	0.89	27.8	0.05
H3SSU03-3-8	PHASE III South	20	0	-20	-19.6	-0.525	0.005	0.1	U	0.05		0.02	0.625		0.56	0.63	19.7	0.07
H3SSU04-2-8	PHASE III South	18	0	-18	-18.0	-0.2125	0.006	0.1	U	0.05		0.01	0.3125	U	0.53	0.58	18.1	0.05
H3SSU04-3-8	PHASE III South	22	0	-22	-21.5	-0.2125	0.005	0.1	U	0.05		0.01	0.3125		0.63	0.69	21.6	0.06
H4SSU01-1-8	PHASE IV Slot	23	0	-23	-23.0	-0.2125	0.004	0.1	U	0.01		0.01	0.3125		0.72	0.74	23.1	0.02
H4SSU01-2-8	PHASE IV Slot	37	3	-34	-36.9	-0.0125	0.008	0.3		0.01		0.01	0.3125		1.17	1.19	37.2	0.02
H4SSU03-2-8	PHASE IV Slot	20	0	-20	-20.2	-0.2125	0.005	0.1	U	0.02		0.01	0.3125	U	0.63	0.65	20.3	0.02
H4VSU01-1-8	PHASE IV VLT	23	0	-23	-23.3	-0.2125	0.004	0.1	U	0.03		0.01	0.3125		0.71	0.75	23.4	0.04
H4VSU01-2-8	PHASE IV VLT	33	0	-33	-32.7	-0.2125	0.003	0.1	U	0.03		0.01	0.3125	U	1.02	1.05	32.8	0.03
H4VSU02-1-8	PHASE IV VLT	18	3	-15	-18.1	-0.0125	0.016	0.3		0.03		0.01	0.3125		0.55	0.59	18.4	0.04
H4VSU02-2-8	PHASE IV VLT	27	26	-1	-24.6	2.2875	0.096	2.6		0.01		0.01	0.3125		0.85	0.87	27.2	0.02
H4VSU03-1-8	PHASE IV VLT	24	3	-21	-23.8	-0.325	0.012	0.3		0.05		0.02	0.625		0.7	0.77	24.1	0.07

Note:

U = Non-detect at reporting limit

Table 4-7 Summary of NAG Results for Heap Leach Pad Samples
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Sample Identifier	Location	Depth Interval	NAG pH	NAG (kg H₂SO₄/t)
H3SSU01-1-7	Phase III South HLP	0–50 feet	3.93	3.77
H3SSU01-2-7	Phase III South HLP	20–97 feet	3.87	4.87
H3SSU04-2-7	Phase III South HLP	50–100 feet	3.6	5.32
H3SSU04-3-7	Phase III South HLP	100–116.5 feet	3.66	4.65
H4VSU01-1-7	Phase IV VLT HLP	50–107 feet	3.38	5.76
H4VSU01-2-7	Phase IV VLT HLP	0–50 feet	3.97	3.77

Table 4-8 Summary of Detectable SPLP Results for Heap Leach Pad Samples
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

HLP Name and Sample Type	Sample Identifier	Depth Interval	Aluminum	Calcium	Cobalt	Copper	Iron	Magnesium	Manganese	Mercury	Silver	Sodium	Strontium
Phase I/II HLP: Soil Boring Composite	H12SU01	0–50	40 U	90	0.8 U	3.4	40 U	17	0.65 J	0.00015 J	0.4 U	11 J	0.52
	H12SU01	50–77	22	110	0.8 U	2.5	40 U	36	1.2	0.0006 U	0.4 U	13 J	0.62
	H12SU01	50–77	21	100	0.11 J	2.5	8.6 J	35	1.2	0.0006 U	0.05 J	11 J	0.53
	H12SU01 (FD)	0–50	40 U	86	0.8 U	3.3	40 U	17	0.6 J	0.0006 U	0.4 U	9.8 J	0.49
	H12SU01 (FD)	50–77	22	100	0.8 U	2.5	40 U	36	1.2	0.00021 J	0.4 U	12 J	0.51
	H12SU02	50–77	17 J	100	0.8 U	7.2	40 U	29	0.51 J	0.00081	0.4 U	13 J	0.51
	H12SU02	0–50	17	120	0.4 U	8.6	14	37	1	0.0006 U	0.1 U	12 J	0.54
	H12SU02	0–50	16 J	110	0.8 U	8.6	14 J	35	1	0.00015 J	0.4 U	9.5 J	0.54
	H12SU02 (FD)	0–50	15	110	0.4 U	8.1	11	34	0.95	0.0006 U	0.1 U	11 J	0.51
	H12SU02 (FD)	50–77	17	100	0.4 U	7.2	20 U	29	0.53	0.00041	0.1 U	11 J	0.49
Phase III 4X HLP: Soil Boring Composite	H3XSU01	0–50	23	88	0.11 J	1.6	20 U	36	0.96	0.0006 U	0.1 U	11 J	0.28
	H3XSU01	50–67	26	110	0.4 U	3.3	20 U	39	0.91	0.0006 U	0.1 U	11 J	0.37
	H3XSU02	50–67	18	83	0.1 J	1.4	20 U	31	0.89	0.0006 U	0.1 U	11 J	0.31
	H3XSU02 (FD)	50–67	16	77	0.4 U	1.3	20 U	29	0.86	0.0006 U	0.1 U	11 J	0.3
Phase III 4X HLP: Surface Discrete	H3XSS07 (FD)	0.25–0.75	8.5 J	104	0.2 U	1.1	10 U	20	0.57	0.0006 U	0.1 U	10.1	0.17
Phase III South HLP: Soil Boring Composite	H3SSU01	0–50	7.3 J	130	0.4 U	5.1	20 U	19	0.43 J	0.00016 J	0.2 U	11 J	0.68
	H3SSU01	20–97	8.8 J	99	0.4 U	8.8 J	5.6 J	23	0.52	0.00016 J	0.2 U	11 J	0.6
	H3SSU02	50–100	19 J	110	0.8 U	2.9	40 U	33	1.1	0.0011	0.4 U	12 J	0.52
	H3SSU02	100–112	22	120	0.8 U	5.2	40 U	36	1.3	0.0006 U	0.4 U	13 J	0.45
	H3SSU03	100–117	19 J	88	0.8 U	3.3	13 J	37	1.4	0.0006 U	0.4 U	13 J	0.4
	H3SSU04	50–100	18	100	0.4 U	2.9	5.8 J	34	0.89	0.0006 U	0.2 U	12 J	0.44
Phase IV Slot HLP: Soil Boring Composite	H4SSU01	0–50	16 J	100	0.8 U	3.5	40 U	30	0.88 J	0.0006 U	0.4 U	11 J	0.41
	H4SSU01	50–97	30	240	0.8 U	6.4	40 U	43	1.3	0.00015 J	0.4 U	12 J	1.2
	H4SSU02	0–50	13 J	96	0.8 U	5.4	40 U	27	0.79 J	0.0006 U	0.4 U	11 J	0.49
	H4SSU03	50–77	27	100	0.13 J	6.8	20 U	41	1.3	0.0006 U	0.1 U	12 J	0.57
Phase IV VLT HLP: Soil Boring Composite	H4VSV01	50–107	20 U	220	0.4 U	1.3	20 U	30	1.5	0.0006 U	0.2 U	13 J	0.72
	H4VSV01	0–50	27	88	0.11 J	5	20 U	39	1.2	0.00015 J	0.2 U	12 J	0.3
	H4VSV02	0–50	23	84	0.8 U	4.7	40 U	33	1	0.00017 J	0.4 U	11 J	0.3
	H4VSV02	50–107	34	91	0.8 U	6.1	40 U	46	1.4	0.0006 U	0.4 U	12 J	0.37
	H4VSV03	0–50	36	78	0.8 U	5	40 U	48	1.4	0.0006 U	0.4 U	9.4 J	0.26
	H4VSV03	50–87	25	97	0.8 U	4.4	40 U	37	1.1	0.0006 U	0.4 U	12 J	0.44
	H4VSV03 (FD)	0–50	39	83	0.8 U	5.3	40 U	52	1.6	0.0006 U	0.4 U	12 J	0.27
Phase IV VLT HLP: Surface Discrete	H4VSS04 (FD)	0.25–0.75	10 U	10 U	0.2 U	0.4 U	10 U	5 U	0.5 U	0.0006 U	0.1 U	12	0.05 U
VLT: Surface Discrete	CAPSS02	0.25–0.75	20 U	95	0.4 U	7.1	20 U	3.8 J	1 U	0.00045	0.1 U	7.8 J	0.35

Notes:

Results in mg/L

J = estimated result

U = non-detect at reporting limit

Table 4-9 Summary of Detectable MWMP Results for Heap Leach Pad Samples
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

HLP Name and Sample Type	Sample ID	Depth	pH	Total Alkalinity	Bicarbonate as CaCO ₃	Chloride	Nitrate + Nitrite as N	Nitrate as N	Nitrite as N	Phosphorus, ortho dissolved	Sulfate	TDS	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Sodium	Thallium	Vanadium	Zinc
Phase I/II HLP: Surface Discrete	H12SS01	0.25-0.75	3.7	2 U	2 U	4	0.73	0.73	0.01 U	0.56	3650	5260	164	0.0004 U	0.0035	0.022	0.014	0.16	0.0052	478	0.02 U	0.53	169	2.43	0.0004	319	5.89	0.0017	0.37	5.4	0.0106	30.3	0.0003	0.01 U	0.71
	H12SS04	0.25-0.75	3.6	2 U	2 U	5	0.71	0.71	0.01 U	0.38	6010	8220	441	0.0004 U	0.0067	0.006	0.031	0.15	0.0099	409	0.05	1.82	102	11.4	0.0004	651	18.4	0.0104	1.03	0.6 U	0.0167	18.6	0.0002	0.01	1.58
Phase III 4X HLP: Surface Discrete	H3XSS05	0.25-0.75	4	2 U	2 U	2	0.14	0.13	0.01	0.31	1340	1980	67.9	0.0011	0.0009	0.003	0.007	0.12	0.0018	254	0.01 U	0.26	14.5	0.96	0.0008	105	2.74	0.0008	0.16	0.3 U	0.0042	9.2	0.0001 U	0.005 U	0.28
	H3XSS07	0.25-0.75	4.1	2 U	2 U	2	0.06	0.06	0.01 U	0.07	660	900	46.9	0.0004 U	0.0005 U	0.003	0.004	0.11	0.0011	61.4	0.01 U	0.18	3.45	0.98	0.0002	64.9	1.79	0.0002 U	0.11	0.3 U	0.0025	5.4	0.0001 U	0.005 U	0.22
Phase III South HLP: Surface Discrete	H3SSS03	0.25-0.75	7.1	75	75	1	1.97	1.91	0.06	0.4	130	310	0.09	0.0018	0.0217	0.029	0.004	0.54	0.0001 U	57.8	0.02 U	0.02 U	0.07	0.04 U	0.0001 U	5.9	0.01 U	0.0002 U	0.02 U	2.8	0.0001 U	29.7	0.0001 U	0.01	0.02
	H3SSS07	0.25-0.75	3.6	2 U	2 U	5	0.78	0.78	0.01 U	6	7330	10400	532	0.0004 U	0.0075	0.003	0.029	0.16	0.0116	299	0.04	1.17	283	17.3	0.0004	812	14.6	0.039	0.88	0.3 U	0.0256	39.4	0.0002	0.005 U	2.03
Phase IV Slot HLP: Surface Discrete	H4SSS06	0.25-0.75	4	2 U	2 U	3	0.68	0.68	0.01 U	0.66	2540	3740	46.4	0.001	0.0023	0.003	0.004	0.16	0.0056	62	0.01 U	0.18	3.47	0.99	0.0002	65.7	1.81	0.0067	0.12	0.3 U	0.0073	5.5	0.0001 U	0.005 U	0.22
	H4SSS07	0.25-0.75	4.4	2 U	2 U	1	0.09	0.09	0.01 U	0.04	380	640	14.5	0.0004 U	0.0005 U	0.003	0.002	0.13	0.0008	75.4	0.01 U	0.1	18.5	0.35	0.0002	39.3	1.09	0.0002 U	0.06	0.6	0.0013	4.2	0.0001 U	0.005 U	0.12
Phase IV VLT HLP: Surface Discrete	H4VSS03	0.25-0.75	3.4	2 U	2 U	11	1.52	1.52	0.01 U	6.8	19200	26100	2170	0.0012	0.0278	0.003	0.121	0.2	0.0427	425	0.16	5.47	290	36.1	0.0005	2110	59.1	0.028	3.31	0.3 U	0.101	146	0.0006	0.072	5
	H4VSS06	0.25-0.75	3.7	2 U	2 U	5	0.47	0.46	0.01	1.1	1330	8300	488	0.0004	0.007	0.003	0.035	0.11	0.0109	420	0.02	1.77	60.2	7.47	0.0004	651	17	0.0015	1.09	0.3 U	0.0268	23.1	0.0001	0.01	1.63
VLT Material: Surface Discrete	CAPSS02	0.25-0.75	5.1	2 U	2 U	7	1.49	1.49	0.01 U	0.16	2050	2970	11.2	0.002 U	0.026	0.029	0.002	0.17	0.0045	458	0.01 U	0.13	200	0.03	0.0092	80.2	1.08	0.022	0.13	17.5	1.11	18	0.111	0.005 U	0.23

Notes:

Depth interval presented in feet bgs

Results are in mg/L.

N = Nitrogen

Table 4-10 Summary of Heap Leach Pad Material Geotechnical Results
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Soil Boring	Top Depth (feet)	Bottom Depth (feet)	Wet/Dry Density (lbs/ft³)	Moisture Content (percent)	Unified Soil Classification (sieve analysis)	Specific Gravity	Maximum Dry Density/Optimum Moisture Content (lbs/ft³/percent)	Cohesion/Friction Angle (lbs/ft²/degrees)
H12SU01	19.5	22				2.70	145.6/4.1	
	20	20		4.7 (4.2)				
	22	25			GW			
	37.5	38	119.4/113.4	5.3	GW			598/43.3
	38	38.5	122.8/117.5	4.5	SW			633/43.4
	40	40		4.9				
	42	43.5			GW			
	43.5	47				2.81	142.4/5.8	
	59	61.5			GW			
	60	60		7.6				
	61.5	63.5				2.70		
H12SU02	20	20		4.2				
	40	40		3.1				
	60	60		10.3				
	61	63.5					140.3/6.7	
	78	78.5	120/112.4	6.8	SW			1636/36.9
H3SSU01	17	19.5				2.77	145.2/5.0	
	19.5	22			SM			
	20	20		4.2				
	39.3	42.4				2.68	138.3/6.5	
	40	40		3.1				
	57	60.5				2.76	142.0/6.2	
	60	60		10.3				
	60.5	62.9	134.5/126.9	5.9	GW			931/43.0
	77	84				2.66	143.3/5.6	

Table 4-10 Summary of Heap Leach Pad Material Geotechnical Results
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Soil Boring	Top Depth (feet)	Bottom Depth (feet)	Wet/Dry Density (lbs/ft³)	Moisture Content (percent)	Unified Soil Classification (sieve analysis)	Specific Gravity	Maximum Dry Density/Optimum Moisture Content (lbs/ft³/percent)	Cohesion/Friction Angle (lbs/ft²/degrees)
	84	86.4			GM			
H3SSU02	42.4	45.1						
	57.5	58	138.3/128.6	7.5	SW			109/43.2
	58	58.5	153.6/140.6	9.2	GW			1378/43.3
	60.5	62.9						
H3SSU03	20	20		6.6				
	40	40		9.1				
	60	60		8.5				
	80	80		5.7				
	100	100		7.1				
	87.5	88	145.2/137.1	5.9	SW			2509/33.7
	88	88.5						
HSS3U04	19	22.3				2.76	146.2/5.6	
	20	20		10.5				
	22.3	25.2			GW			
	38.6	42				2.78	132.1/8.1	
	40	40		8.1				
	42	45			SW-SM			
	60	60		11.2				
	60.6	63.3					140.0/6.7	
	63.3	66			GM/SM			
	79.8	83					134.6/7.8	
	80	80		7.3				
	83	85.5			GM/SM			
	99	103.9						

Table 4-10 Summary of Heap Leach Pad Material Geotechnical Results
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Soil Boring	Top Depth (feet)	Bottom Depth (feet)	Wet/Dry Density (lbs/ft³)	Moisture Content (percent)	Unified Soil Classification (sieve analysis)	Specific Gravity	Maximum Dry Density/Optimum Moisture Content (lbs/ft³/percent)	Cohesion/Friction Angle (lbs/ft²/degrees)
	97.5	98			GW/SW			1596/36.6
	98	98.5	117.3/108.6	8.1				
	99	103.9			GW	2.71	139.4/6.6	
	100	100		9.7				
H3XSU01	19.5	22				2.76	135.3/7.1	
	20	20		7.3				
	22	25.4			SM			
	39.9	42				2.66		
	40	40		9.6				
	42	44.5			SW			
	60	60		6				
	60	63.5	129.4/123.9	4.5		2.73	144.7/4.9	
	63.5	67			GW			
	68	68.5			GW			3084/43.3
H3XSU02	20	20		7.5				
	38	38.5						
	40	40		8.9				
	60	60		9.7				
H3XSU03	17.5	18	134.8/122.1	10.3	SW			337/40.4
	20	20		8.2				
	40	40		8.9				
	60	60		6.7				
H4SSU01	20	20		8.4				
	40	40		5.8				
	47.5	48	104.5/96.9	7.8	SW			640/43.3

Table 4-10 Summary of Heap Leach Pad Material Geotechnical Results
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Soil Boring	Top Depth (feet)	Bottom Depth (feet)	Wet/Dry Density (lbs/ft³)	Moisture Content (percent)	Unified Soil Classification (sieve analysis)	Specific Gravity	Maximum Dry Density/Optimum Moisture Content (lbs/ft³/percent)	Cohesion/Friction Angle (lbs/ft²/degrees)
	60	60		7.7				
H4SSU02	28	28.5	128.5/122.3	5.1	SW			416/38.9
H4SSU03	7.5	8.0	110.3/106.4	3.7	GW			272/41.7
	20	20		7.7				
	20.5	23				2.80	150.5/3.5	
	23	25.5			GW			
	38.9	42				2.71	134.5/6.7	
	40	40		5.7				
	42	44			GW			
	59	61.5				2.74	133.0/7.0	
	60	60		10.4				
	61.5	64			GW			
H4SSU04	20	20		3.9				
	40	40		4.1				
	58	58.5	115.4/110.0	4.9	GW			2175/38.6
H4V роу01	20	20		8				
	20.4	23.7				2.67	136.5/6.5	
	23.7	26			SW			
	40	40		8.6				
	40.3	43				2.64	138.4/7.0	
	43	43.5			SW			
	47.5	48	148.4/136.2	8.9	SW			1263/43.0
	48	48.5						
	60	60		8				
	60	62.5				2.72	137.1/7.5	

Table 4-10 Summary of Heap Leach Pad Material Geotechnical Results
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Soil Boring	Top Depth (feet)	Bottom Depth (feet)	Wet/Dry Density (lbs/ft³)	Moisture Content (percent)	Unified Soil Classification (sieve analysis)	Specific Gravity	Maximum Dry Density/Optimum Moisture Content (lbs/ft³/percent)	Cohesion/Friction Angle (lbs/ft²/degrees)
	62.5	65			GW			
	80	80		4.7				
	80.5	83.7				2.67	147.3/4.2	
	83.7	87			GW			
	100	100		4.9				
	100.3	104				2.77	145.5/5.1	
	104	107			SW			
H4VSU02	20	20		9.7				
	27.5	28						
	28	28.5	135.5/124.3	9.1	GW/SW			130/40.0
	40	40		7.9				
	60	60		13.4				
	80	80		3.1				
	100	100		3.5				
H4VSU03	20	20		9.4				
	40	40		8.5				
	60	60		7.1				
	80	80		6.5				
	87.5	88	139.5/132.2	5.5	GW			844/41.0

Notes:

A rock correction factor was applied to the test results for maximum dry density and optimum moisture content.

GM = silty gravel

GW = well-graded gravel

SM = silty sand

SW = well-graded soil

Table 4-11 Heap Leach Pad Material Property Averages and Standard Deviations
Remedial Investigation Report, Arimetco Facilities Operable Unit 8, Anaconda Copper Yerington Mine

Location	Wet/Dry Density (lbs/ft ³)	Moisture Content (percent)	Specific Gravity	Maximum Dry Density/Optimum Moisture Content (lbs/ft ³ /percent)	Cohesion/Friction Angle (lbs/ft ² /degrees)
Phase I/II	120.7/114.4	5.7	2.74	142.8/5.5	955.7/41.2
Phase III South	137.8/128.4	7.7	2.73	140.1/6.5	1304.6/40.0
Phase III 4X	132.1/123.0	8.0	2.72	140.0/6.0	1710.5/41.9
Phase IV Slot	114.7/108.9	6.3	2.75	139.3/5.7	875.8/40.6
Phase IV VLT	141.1/130.9	7.5	2.69	141.0/6.1	745.7/41.3
Average for All HLPs	129.3/121.1	7.1	2.73	140.4/6.1	1097.4/40.8
Standard Deviation	13.8/12.1	2.3	0.050	5.1/1.2	871.3/3.0

Note:

A rock correction factor was applied to the test results for maximum dry density and optimum moisture content.